MongoDB Resources

Installation

Installing MongoDB is generally pretty simple but there are a few different things you might want to install. In particular, I highly encourage you all to use the **MongoDB Compass** GUI which will make it possible to look directly at your data, whether it is setup locally or remotely.

Installing MongoDB to host your database locally

This will allow you to connect to your client very easily but it will be difficult to access the data remotely (like we do for this workshop) and you will need space for any data you are storing or working with.

I do not recommend you download and run MongoDB databases locally.

Use this link to find the correct method of installation to install and setup a local client for MongoDB. You may also want to install **Mongo Shell (Mongosh)** which will allow you to access MongoDB locally or remotely through command line.

Installing MongoDB Compass

MongoDB Compass is an incredibly easy to use GUI for executing all your basic CRUD operations directly in MongoDB without needing to use Python or anywhere else. This is the easiest method for adding data to a database, especially in a large batch. You can download Compass here and use this link for an overview of what Compass can do.

MongoDB for VSCode

If you use VS Code (a commonly used IDE), there is an extension that provides most of the functionality of Compass right from your normal IDE. In particular, there is a feature to allow you to write a query in MongoDB directly then export it to the equivalent code in Python or any other language. This is a great alternative to using Compass and can be a good way to build familiarity with VS Code which is a good tool to be comfortable with. *Remember that the syntax for PyMongo and MongoDB are slightly different so you will have to learn a few minor things to use this method.*

MongoDB Atlas

The client we use in this workshop is hosted on MongoDB's cloud platform **Atlas**. Atlas provides a free tier which is more than functional for just getting to know how to use MongoDB or a basic implementation of MongoDB into a stack of your choosing. It is also quite easy to access the Atlas client through Compass and you can learn how to manage roles, access, and API use which are all good to get some experience with because they are often not taught in classes.

Getting more experience with MongoDB

There are really two main ways that people will interact with MongoDB:

1. As part of a web/app development stack (MERN, MEAN)
2. As a SQL replacement for basic data analysis and getting data ready for more sophisticated tools

Depending on your interest, how you will want to practice using MongoDB will change.

For people more interested in the web/app development side, here are a few examples where people have shown how to use MongoDB in that setting:

- Building a Chat App with MERN Stack
- Build a Fullstack Blog App using MERN
- Building a CRUD REST API

Unfortunately, in practice you will likely need more coding experience than just basic Python to build full-on web apps but I encourage you all to use these types of projects as ways to

For people more interested in the data analytics/manipulation side of thingsL in my experience the best way to learn is to try things out on live data.

I have the 'songs' collection in the database and you can try asking questions like "What was the top-streamed song in 2023?" or "What is the most danceable song released in July?" You can also step up into more complicated methods such as aggregate pipelines which really let MongoDB compete with SQL's robust data analysis framework.

I also encourage you all to try finding your own data and exploring that using MongoDB. Kaggle has plenty of datasets people have uploaded and you can add them to your own Atlas hosted cluster and practice using that. The songs

data I have provided is actually a subset of some data I found on Kaggle. You can also look into gathering your own data using various APIs (the NYT API has a convenient python library).